

## CLAIMS

What is claimed is:

1. A method of monitoring power provided on multiple  
5 output channels of a switch mode power supply, comprising  
the steps of:

enabling at least one first output channel to  
provide a first signal representative of a first output;

10 when the level of the first signal is within a  
predetermined range of output levels, initiating a first  
time delay;

enabling at least one second output channel to  
provide a second signal representative of a second  
output;

15 in the event the second channel is enabled before  
the expiration of the first time delay, initiating a  
second time delay when the level of the second signal is  
within the predetermined range of output levels, and  
asserting a single status signal when the second time  
20 delay expires to indicate that the power provided on the  
first and second channels is good; and

in the event at least one of the first and second  
signal levels is no longer within the predetermined range  
of output levels, de-asserting the single status signal  
25 to indicate that the power provided on at least one of  
the channels is no longer good.

2. The method of claim 1 further including the steps of  
disabling at least one of the output channels by a user

of the switch mode power supply, and in the event at least one of the output channels remains enabled, ignoring the disabled output channel and asserting the single status signal to indicate that the power provided  
5 on the enabled output channel is good.

3. The method of claim 1 further including the step of detecting at least one fault condition while at least one of the output channels is enabled and de-asserting the  
10 single status signal to indicate the presence of the fault condition.

4. The method of claim 3 wherein the fault condition comprises an input under-voltage lock-out condition.  
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5. The method of claim 1 further including the step of initiating a first soft-start procedure on the first output channel after the first channel is enabled.

20 6. The method of claim 1 further including the step of asserting the single status signal when the first time delay expires to indicate that the power provided on the first channel is good.

25 7. The method of claim 1 further including the step of initiating a second soft-start procedure on the second output channel after the second channel is enabled.

8. The method of claim 7 further including the step of,  
in the event the second channel is enabled after the  
expiration of the first time delay, ignoring the second  
channel until after the second soft-start procedure  
5 finishes and asserting the single status signal to  
indicate that the power provided on at least the first  
channel is good.